

We claim:

1. A method of controlling traffic loading on links between a cable modem termination system (CMTS) and a plurality of Internet Service Providers (ISP) in a cable data system, comprising the steps of:

5 receiving a request for bandwidth on a cable data system link from a first ISP by a requesting subscriber;

determining available bandwidth on said cable data system link;

determining available bandwidth on the cable data system link for the first ISP;

comparing available bandwidth for said first ISP with the amount of requested bandwidth;

10 and

granting or denying cable data service to the new subscriber based upon the determination of whether the available bandwidth is greater than, less than or equal to the bandwidth to be allocated to the new subscriber.

15 2. The method according to claim 1, further comprising the step of:

transferring the new subscriber to a different cable data system link with more available capacity when the available bandwidth on the requested cable data system link for the first ISP is less than the bandwidth requested by the new subscriber.

20 3. The method according to claim 1, wherein said new subscriber is randomly transferred to a different cable data system link.

4. The method according to claim 1, wherein availability of bandwidth for said first ISP on other cable data system links is determined before the new subscriber is transferred to a cable data  
25 system link with more availability.

5. The method according to claim 1, further comprising the steps of:

granting cable data service to said requesting subscriber on said requested cable data system link even though the available bandwidth on the requested cable data system link is less than the bandwidth being allocated to the new subscriber; and

5 flagging said requested cable data system link as being over subscribed for said first ISP.

6. The method according to claim 5, wherein data packets from said first ISP for at least some subscribers on the cable data system link are lost when said cable data system link is over subscribed for said first ISP.

10 7. The method according to claim 6, wherein data packets are randomly lost.

8. The method according to claim 6, wherein data packets are selected to be lost based on each subscribers level of service, wherein higher levels of service lose fewer packets.

15 9. The method according to claim 1, further comprising the step of:

granting cable data service to said requesting subscriber using available bandwidth reserved for a second ISP.

20 10. A system for controlling traffic loading on links between a cable modem termination system (CMTS) and a plurality of Internet Service Providers (ISP) in a cable data system, comprising:

means for receiving a request for bandwidth on a cable data system link from a first ISP by a requesting subscriber;

25 means for determining available bandwidth on said cable data system link;

means for determining available bandwidth on the cable data system link for the first ISP;

means for comparing available bandwidth for said first ISP with the amount of requested bandwidth; and

means for granting or denying cable data service to the new subscriber based upon the determination of whether the available bandwidth is greater than, less than or equal to the bandwidth to be allocated to the new subscriber.

11. The system according to claim 10, further comprising:

means for transferring the new subscriber to a different cable data system link with more available capacity when the available bandwidth on the requested cable data system link for the first ISP is less than the bandwidth requested by the new subscriber.

12. The system according to claim 10, wherein said new subscriber is randomly transferred to a different cable data system link.

13. The system according to claim 10, wherein availability of bandwidth for said first ISP on other links is determined before the new subscriber is transferred to a cable data system link with more availability.

14. The system according to claim 10, further comprising:

means for granting cable data service to said requesting subscriber on said requested cable data system link even though the available bandwidth on the requested cable data system link is less than the bandwidth being allocated to the new subscriber; and

means for flagging said requested cable data system link as being over subscribed for said first ISP.

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15. The system according to claim 14, wherein data packets from said first ISP for at least some subscribers on the cable data system link are lost when said cable data system link is over subscribed for said first ISP.

5 16. The system according to claim 15, wherein data packets are randomly lost.

17. The system according to claim 15, wherein data packets are selected to be lost based on each subscribers level of service, wherein higher levels of service lose less packets.

10 18. The method according to claim 10, further comprising:  
means for granting cable data service to said requesting subscriber using available bandwidth reserved for a second ISP.